

Energy Balance Models and Planetary Dynamics

Abstract: We know that planetary dynamics can have a significant affect on the climate of planets. Planetary dynamics dominate the glacial-interglacial periods on Earth, leaving a significant imprint on the geological record. They have also been demonstrated to have a driving influence on the climates of other planets in our solar system. We should therefore expect there to be similar relationships on extrasolar planets. Here we describe a simple energy balance model that can predict the growth and thickness of glaciers, and their feedbacks on climate. We will also describe model changes that we have made to include planetary dynamics effects. This is the model we will use at the start of our collaboration to handle the influence of dynamics on climate.

Shawn Domagal-Goldman
NASA/GSFC
Code 699